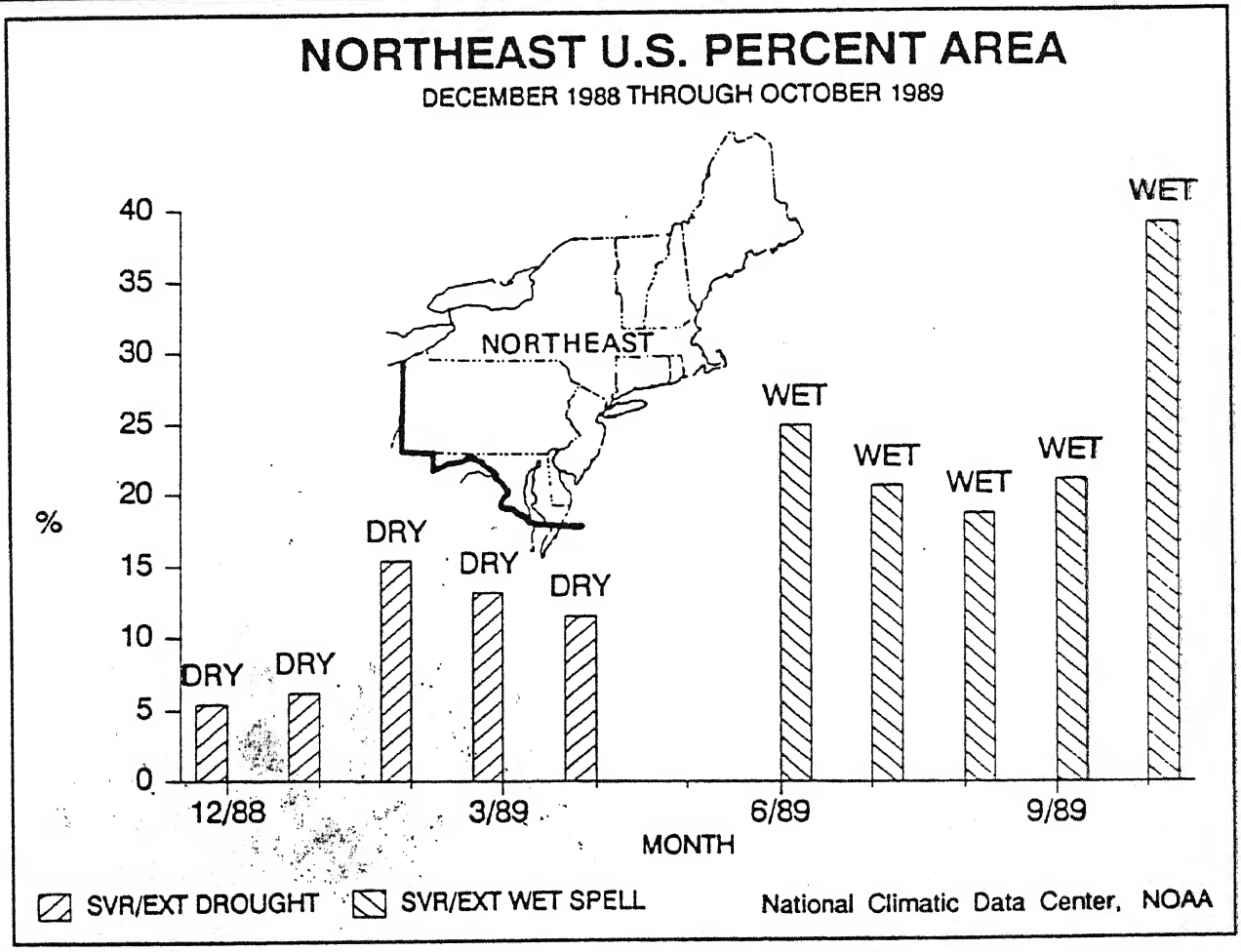
CLIMATE ANALYSIS CENTER

CONTAINS:
OCTOBER '89
UNITED
STATES
CLIMATE
SUMMARY

WEEKLY CLIMATE BULLETIN

No. 89/44 Washington, DC November 4, 1989



THE SIXTH CONSECUTIVE MONTH WITH SURPLUS PRECIPITATION HAS BROUGHT UNUSUALLY WET CONDITIONS TO OVER ONE-THIRD OF THE NORTHEAST REGION, A COMPLETE TURNAROUND FROM EXTREME DRYNESS EARLIER IN THE YEAR. ACCORDING TO THE NATIONAL CLIMATIC DATA CENTER, THE MAY-OCTOBER PERIOD IS THE WETTEST ON RECORD FOR THE NORTHEAST SINCE 1895. FOR MORE DETAILS, REFER TO THE U. S. MONTHLY CLIMATE SUMMARY.

UNITED STATES DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL WEATHER SERVICE – NATIONAL METEOROLOGICAL CENTER

CLIMATE ANALYSIS CENTER

WEEKLY CLIMATE BULLETIN

This Bulletin is issued weekly by the Climate Analysis Center and is designed to indicate, in a brief concise format, current surface climatic conditions in the United States and around the world. The Bulletin contains:

- Highlights of major climatic events and anomalies.
- U.S. climatic conditions for the previous week.
- U.S. apparent temperatures (summer) or wind chill (winter).
- U.S. cooling degree days (summer) or heating degree days (winter).
- Global two-week temperature anomalies.
- Global four-week precipitation anomalies.
- Global monthly temperature and precipitation anomalies.
- Global three-month precipitation anomalies (once a month).
- Global twelve-month precipitation anomalies (every three months).
- Global three-month temperature anomalies for winter and summer seasons.
- Special climate summaries, explanations, etc. (as appropriate).

Most analyses contained in this Bulletin are based on preliminary, unchecked data received at the Climate Analysis Center via the Global Telecommunications System. Similar analyses based on final, checked data are likely to differ to some extent from those presented here.

STAFF

Editor	David Miskus
Associate Editor	Jeffrey D. Logan
Contributors	Vernon L. Patterson
	Monica L. Pogue
	Paul Sabol
	Richard J. Tinker
Graphics	Robert H. Churchill

*To receive copies of the **Bulletin** or to change mailing address, write to:*

Climate Analysis Center, W/NMC53

Attn: WEEKLY CLIMATE BULLETIN

NOAA, National Weather Service

Washington, DC 20233

For CHANGE OF ADDRESS, please include a copy of your old mailing label.

Phone: (301) 763-8071

WEEKLY CLIMATE BULLETIN REQUEST

☐ **Please ADD my address to your mailing list.**

☐ **Please CHANGE my address on your mailing list.**

☐ **Please DROP my address from your mailing list.**

Name _____

Organization _____

Address _____

City _____ State _____ Zip _____

GLOBAL CLIMATE HIGHLIGHTS

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF NOVEMBER 4, 1989

1. Central United States:

SIGNIFICANT RAINS LIMIT DRYNESS.

As much as 81 mm fell on eastern Kansas and Oklahoma while nearly equal totals were observed in southern Texas. As a result of two consecutive weeks with substantial precipitation, short-term moisture deficits have greatly eased [Ending at 7 weeks].

2. Eastern U.S.:

WET CONDITIONS END.

Abundant moisture continued to recede as less than 12 mm was reported at most locations. However, 40 to 50 mm of rainfall over coastal New England kept this area unusually wet [Ended at 9 weeks].

3. Europe:

EXTREME WARMTH DEVELOPS.

Exceedingly mild conditions dominated the continent as temperatures varied from 4°C to as much as 8°C above normal. As a result of the fair weather that has prevailed this year, the first 10 months of 1989 have already produced more hours of sunshine at London than any year on record [3 weeks].

4. Western U.S.S.R.:

MOISTURE BECOMES ABUNDANT.

Generally 25 to 50 mm fell over a large area of the U.S.S.R. from Lithuania across Moscow to the central Asian Soviet Republic of Kazakhstan. During the past four weeks, much of this region has received from two to four times normal rainfall amounts [4 weeks].

5. Turkey:

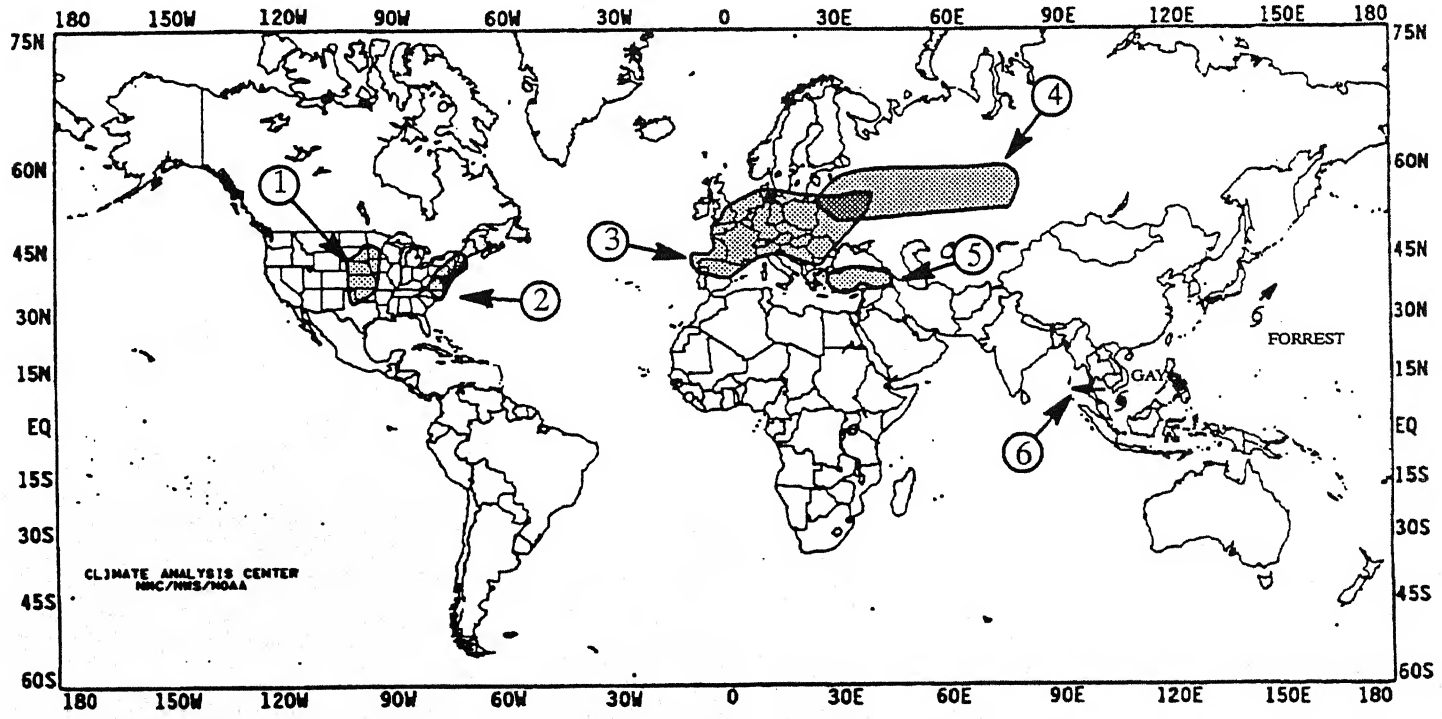
EXCESSIVE RAINS RELENT.

Excessive wetness ended across the country as little or no precipitation (less than 10 mm) fell for the second consecutive week [Ended at 5 weeks].

6. Southern Thailand:

REGION THRASHED BY LATE SEASON TYPHOON.

Typhoon Gay, which rapidly intensified from a tropical depression to a typhoon during mid-week, hampered ship activity in the Gulf of Thailand with 90 knot winds and waves in excess of 10.5 meters. It moved across the Isthmus of Thailand, dumping as much as 237 mm of rain, and maintained its typhoon status as it entered open water west of the peninsula [Episodic Event].



EXPLANATION

TEXT: Approximate duration of anomalies is in brackets. Precipitation amounts and temperature departures are this week's values.

MAP: Approximate locations of major anomalies and episodic events are shown. See other maps in this Bulletin for current two week temperature anomalies, four week precipitation anomalies, long-term anomalies, and other details.

UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF OCTOBER 29 THROUGH NOVEMBER 4, 1989

ld weather dominated the U.S. west of the Mississippi, ually pushing eastward and bringing an early wintry o the eastern half of the nation. The week began with air already entrenched in the northern half of the es and Indian summer weather throughout the nder of the country. A storm system developed in the e Missouri Valley, and an associated cold front hed from the Iowa–Nebraska border southward gh the central and southern Plains. Scattered erstorms, some accompanied by heavy rains and large extended along the front from western Missouri to l Texas. To the north and west of the storm, snow oped across the northern Plains and Rockies. The snow iite heavily in some areas as up to 22 inches blanketed mountain passes in Colorado and Wyoming. As the progressed, the storm system pushed northeastward gh the Great Lakes and slowly dragged the cold front s the eastern half of the nation. Ahead of the system, d warmth enveloped the Great Lakes and New nd while unseasonably mild air covered the rest of the For example, Alpena observed its seventh consecutive f record warmth on Tuesday. As the front moved ard, a northwesterly fetch of unseasonably cold air ed the record warmth across the Great Lakes, and snow squalls developed as the cold air flowed across elatively warm waters of Lake Superior. The snow iued at varying rates for four days, eventually eting Ironwood, MI with 46 inches of snow. Late in the a storm system developed near the South Carolina and spread moderate rain across the southern Atlantic states. The storm rapidly intensified along the Atlantic Coast as it encountered the aforementioned front, then raced northward through New England. rate to heavy rainfall accompanied the storm from the Atlantic northward through eastern New England. As ld air finally moved through the Eastern Seaboard, the ended as a period of wet snow from the Laurel tains northeastward into Maine. There was little or no ulation in most areas, although up to four inches ned parts of the White Mountains. As the week ended, a new storm system was getting organized in the southern Plains, and another blast of Arctic air was poised to invade the northern Rockies and Plains.

According to the River Forecast Centers, the heaviest precipitation fell in isolated parts of central and eastern Texas, in a band stretching from south–central Oklahoma northeastward to west–central Missouri, across the western half of upper Michigan, in eastern North Carolina, eastern New England, and extreme northwestern Washington (see Table 1). Light to moderate precipitation fell throughout the central Rockies, eastern Plains, Mississippi Valley, Great Lakes, eastern Corn Belt, and northern three–fourths of the Eastern Seaboard. Little or no precipitation was reported throughout the rest of the lower 48 states. A familiar scenario took place in Alaska as above–normal precipitation fell in south–central sections, and relatively dry weather dominated Hawaii, except on Kauai Island.

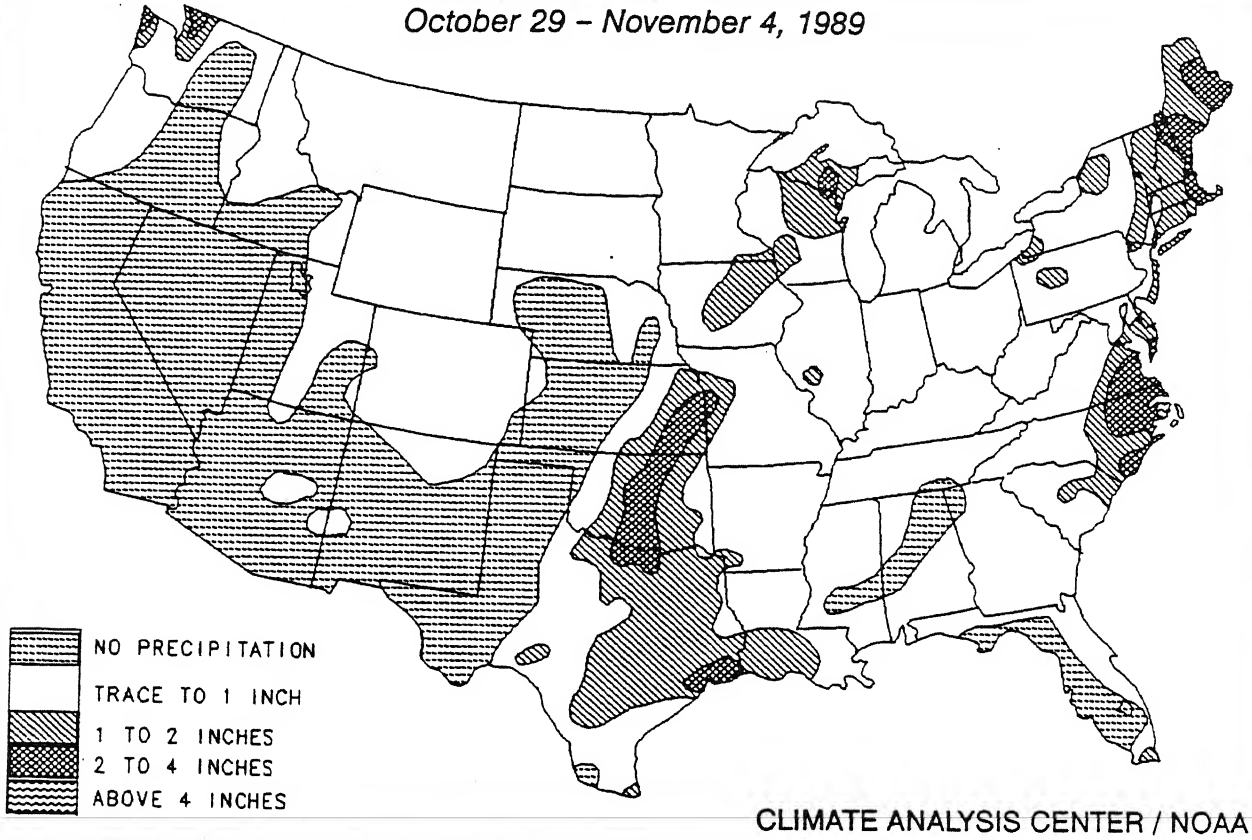
Much of the nation was chilly as most areas west of the Appalachians reported below normal temperatures. The greatest negative departures (between -8°F and -11°F) were observed in the northeastern Plains and northern Mississippi Valley, in most of the Great Basin and central half of the Rockies, and across the Big Bend of Texas (see Table 3). Elsewhere, subnormal temperatures affected a large area from the Mississippi River westward, excluding only the northern half of the Pacific Coast and parts of the desert Southwest, northern Rockies, and Gulf Coast. Over a dozen daily record minimum temperature records were set, and subzero lows were recorded as far south as southern Colorado. In contrast, most of the South Atlantic and New England experienced unusually warm weather, which has now persisted for two weeks in the latter region (see Table 2). Departures of +5°F to +9°F occurred in northern Appalachians and most of Maine in spite of the chilly and snowy weather which developed late in the week. Unseasonably warm weather also dominated the southern two–thirds of Alaska, but very low temperatures were reported farther north in the state.

TABLE 1. Selected stations with 2.00 or more inches of precipitation for the week.

TION	TOTAL (INCHES)	STATION	TOTAL (INCHES)
UTAT, AK	8.70	WILMINGTON, NC	2.51
PE HATTERAS, NC	4.04	HAMPTON/LANGLEY AFB,VA	2.43
NETTE ISLAND, AK	3.75	PROVIDENCE, RI	2.43
CHIKAN, AK	3.59	LIHUE, KAUAI, HI	2.37
JSTON/WM. HOBBY, TX	3.47	GWINN/SAWYER AFB, MI	2.27
LINGHAM, WA	3.19	PORTLAND, ME	2.25
RDOVA/MILE 13, AK	3.16	JUNEAU, AK	2.22
ANUTE, KS	3.12	VALDEZ, AK	2.21
KA, AK	2.86	OKLAHOMA CITY/TINKER AFB, OK	2.20
RTSMOUTH/PEASE AFB, NH	2.78	ISLIP, NY	2.17
LLAYUTE, WA	2.77	MT. WASHINGTON, NH	2.13
JTH WEYMOUTH, MA	2.75	PORT ARTHUR, TX	2.07
NGOR, ME	2.54	CHERRY POINT MCAS, NC	2.03
JSTON/ELLINGTON AFB, TX	2.54		

OBSERVED PRECIPITATION

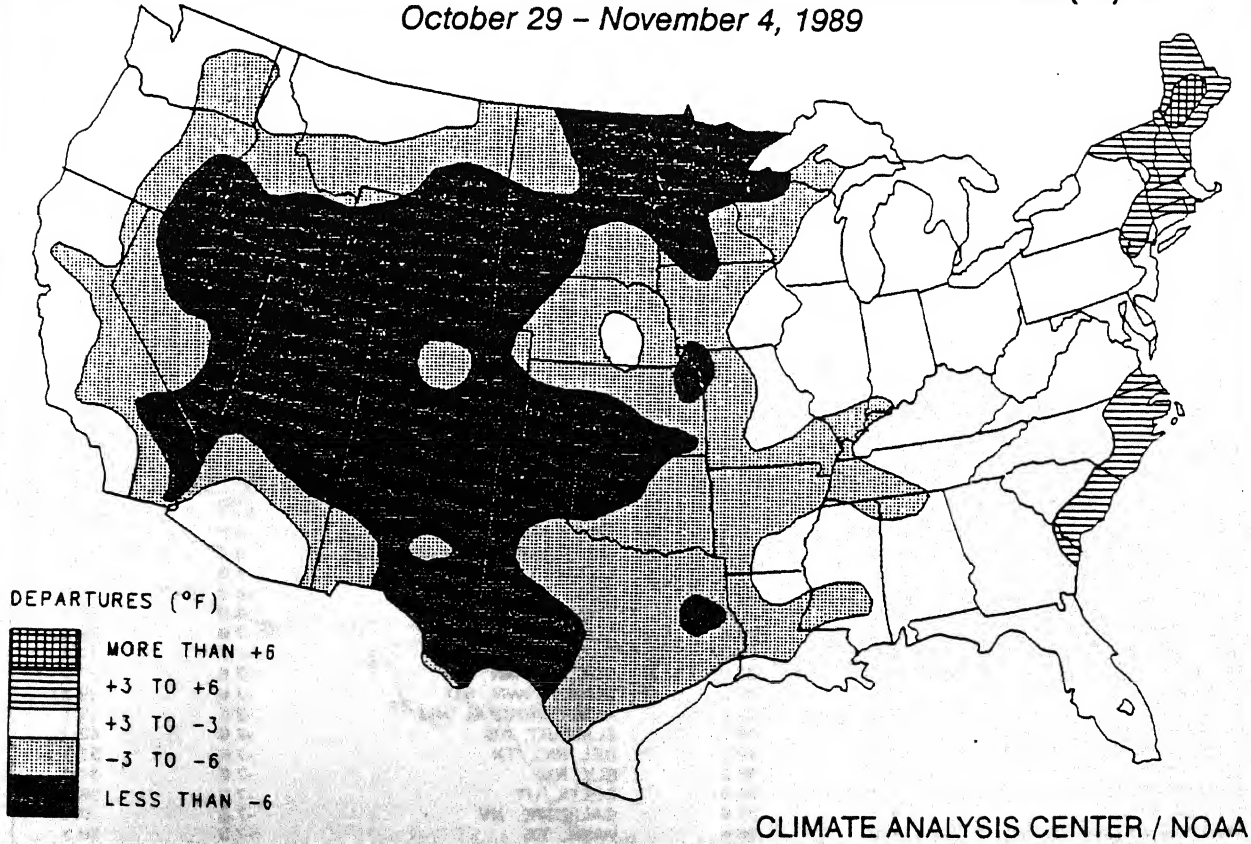
October 29 – November 4, 1989



CLIMATE ANALYSIS CENTER / NOAA

DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)

October 29 – November 4, 1989



CLIMATE ANALYSIS CENTER / NOAA

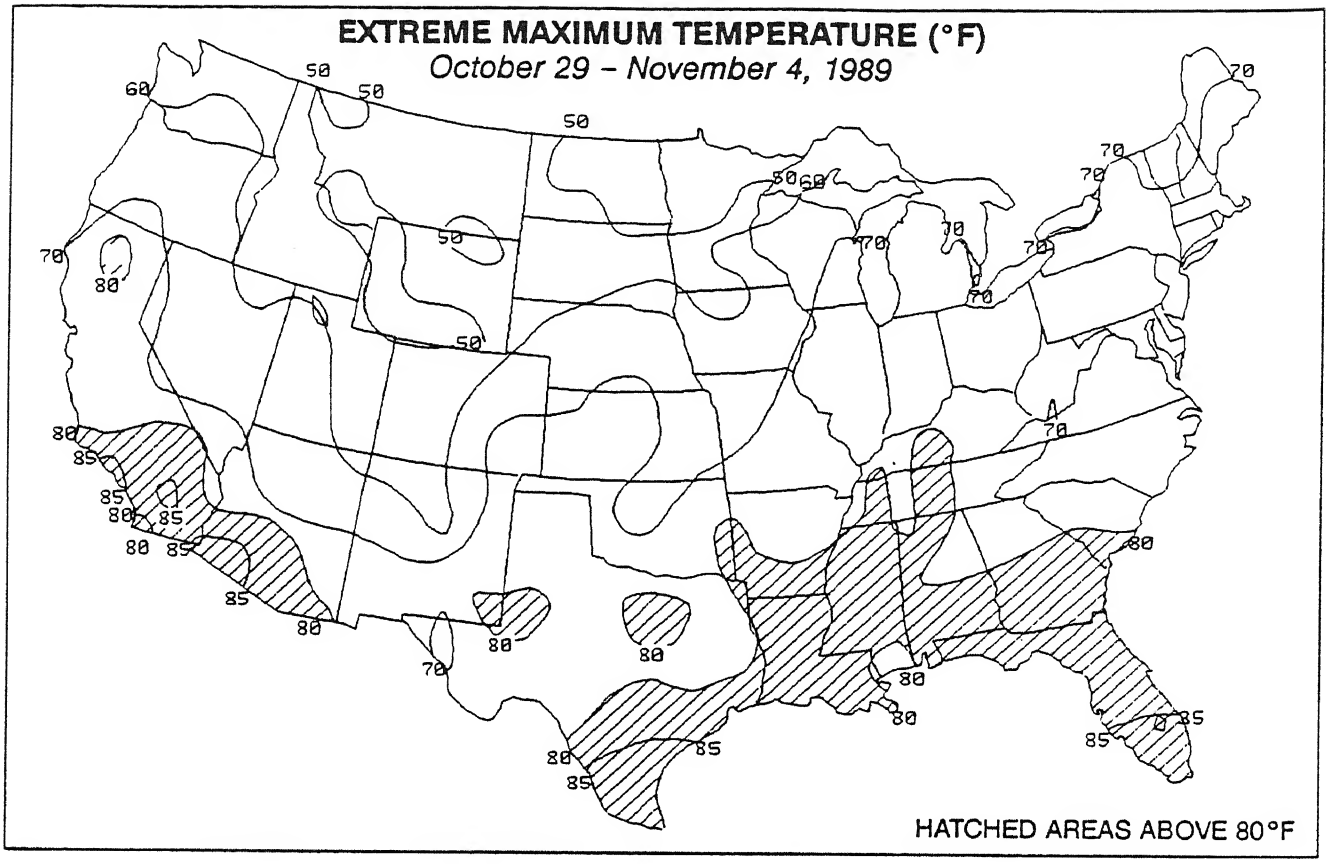
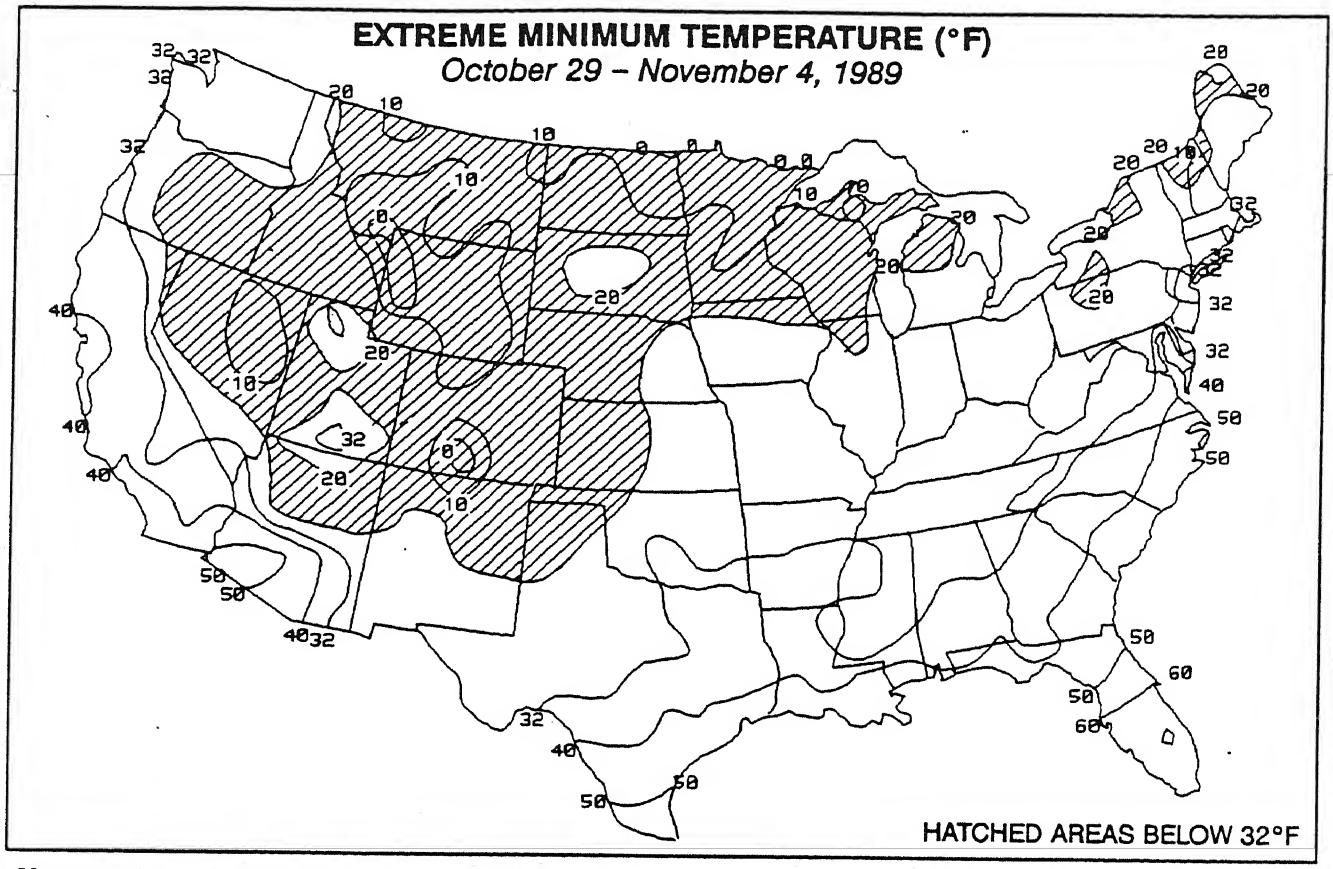


TABLE 2. Selected stations with temperatures averaging 4.0°F or more ABOVE normal for the week.

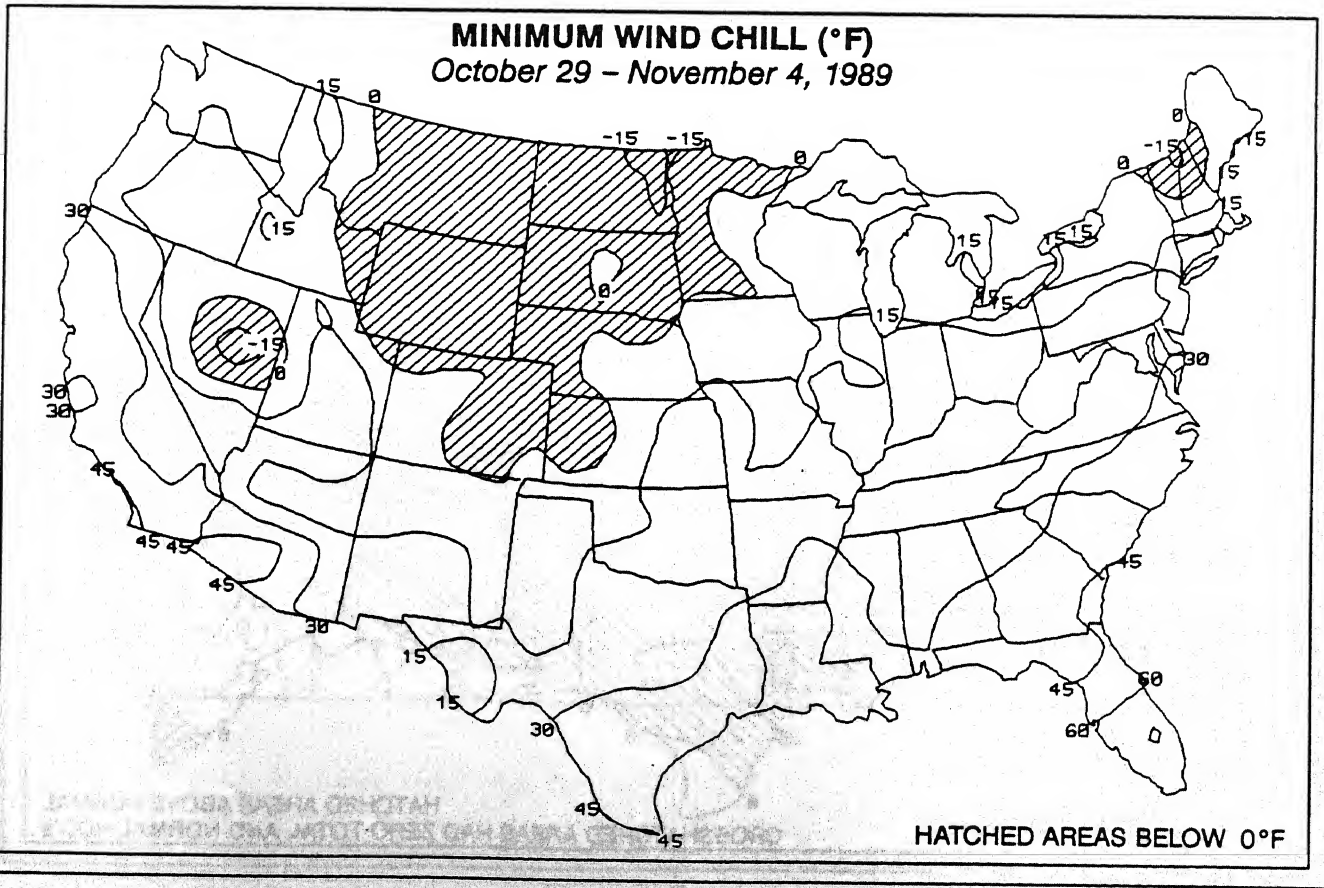
STATION	DEPARTURE (°F)	AVERAGE (°F)	STATION	DEPARTURE (°F)	AVERAGE (°F)
KING SALMON, AK	+12.0	39.9	NORTHWAY, AK	+5.8	14.6
CARIBOU, ME	+8.8	46.5	HOULTON, ME	+5.4	44.1
ILIAMNA, AK	+8.4	37.8	EASTPORT, ME	+5.3	49.6
GULKANA, AK	+7.3	24.4	COLD BAY, AK	+5.3	41.9
JUNEAU, AK	+7.2	44.1	KODIAK, AK	+5.2	42.4
TALKEETNA, AK	+6.9	31.1	AUGUSTA, ME	+5.1	48.4
RUMFORD, ME	+6.7	47.8	BURLINGTON, VT	+4.9	47.3
SITKA, AK	+6.7	47.1	ANCHORAGE, AK	+4.8	32.6
HOMER, AK	+6.5	39.4	SAVANNAH, GA	+4.5	66.2
BANGOR, ME	+6.4	48.9	DOVER AFB, DE	+4.4	56.4
KENAI, AK	+6.2	34.2	PORTLAND, ME	+4.4	48.0
CHARLESTON, SC	+6.0	66.7	POUGHKEEPSIE, NY	+4.3	50.3
CAPE HATTERAS, NC	+5.8	66.1	NEW BERN, NC	+4.0	62.6
YAKUTAT, AK	+5.8	42.1	SEXTON SUMMIT, OR	+4.0	49.5

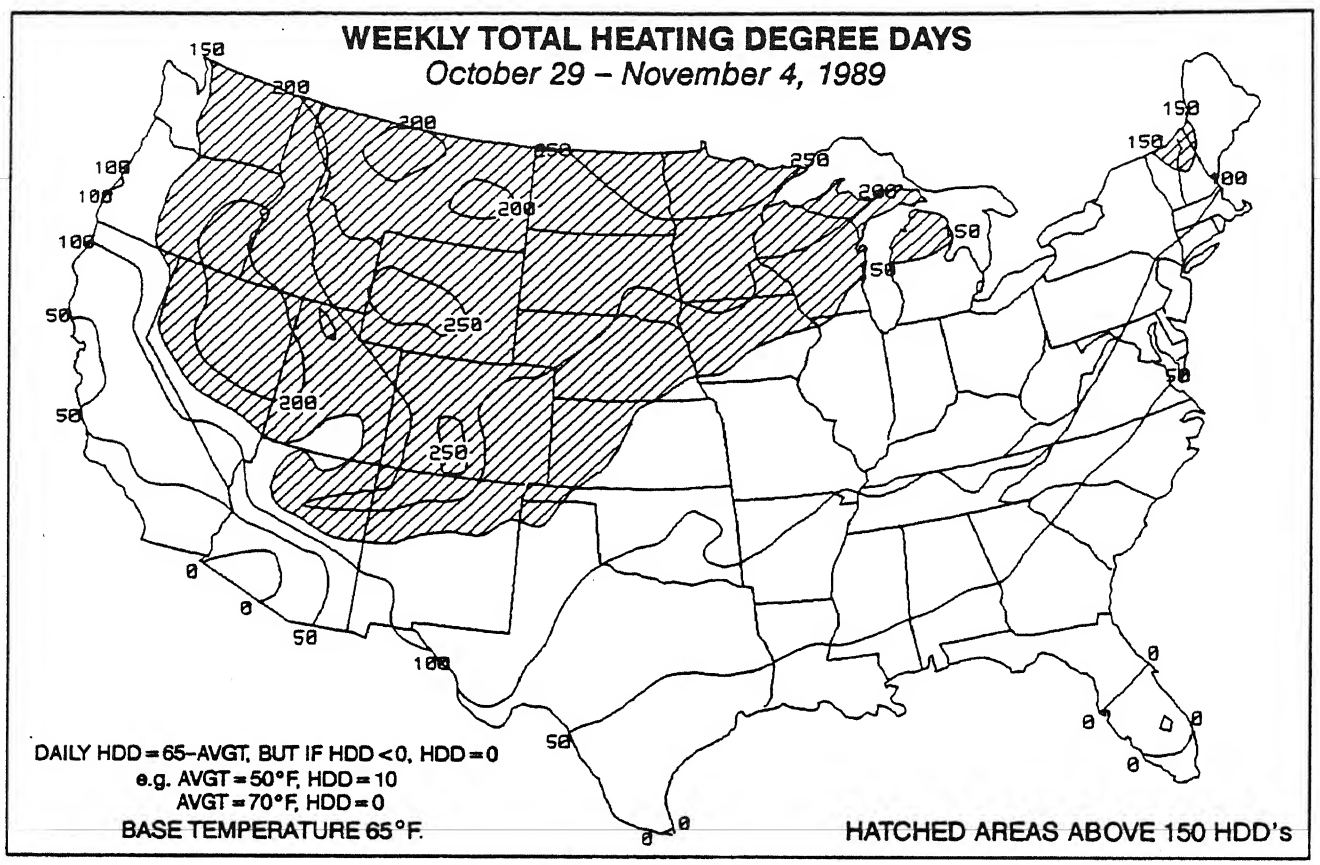
TABLE 3. Selected stations with temperatures averaging 7.5°F or more BELOW normal for the week.

STATION	DEPARTURE (°F)	AVERAGE (°F)	STATION	DEPARTURE (°F)	AVERAGE (°F)
WARROAD, MN	-11.5	23.4	CODY, WY	-8.5	31.8
GRAND FORKS, ND	-10.8	25.0	INTERNATIONAL FALLS, MN	-8.4	26.1
LANDER, WY	-10.8	27.4	LARAMIE, WY	-8.0	27.3
GILLETTE, WY	-10.7	29.3	FORT COLLINS, CO	-8.0	34.6
DEVIL'S LAKE, ND	-10.1	25.9	TRINIDAD, CO	-8.0	38.4
CASPER, WY	-10.1	29.2	LOVELOCK, NV	-7.9	36.9
GRAND JUNCTION, CO	-9.9	37.0	DALHART, TX	-7.7	41.5
FARGO, ND	-9.6	27.9	DULUTH, MN	-7.6	29.0
ALAMOSA, CO	-9.4	27.2	JAMESTOWN, ND	-7.6	29.0
ELKO, NV	-9.4	31.6	ALBUQUERQUE, NM	-7.6	42.7
SHERIDAN, WY	-9.3	29.9	ELKHART, KS	-7.6	42.7
CLOVIS/CANNON AFB, NM	-9.1	42.9	DEL RIO, TX	-7.6	57.1
CEDAR CITY, UT	-8.8	36.2	ELY, NV	-7.5	31.9
POCATELLO, ID	-8.7	32.5	DELTA, UT	-7.5	36.2
PUEBLO, CO	-8.7	37.6	CALIENTE, NV	-7.5	40.6
FARMINGTON, NM	-8.6	36.8	WINK, TX	-7.5	50.5

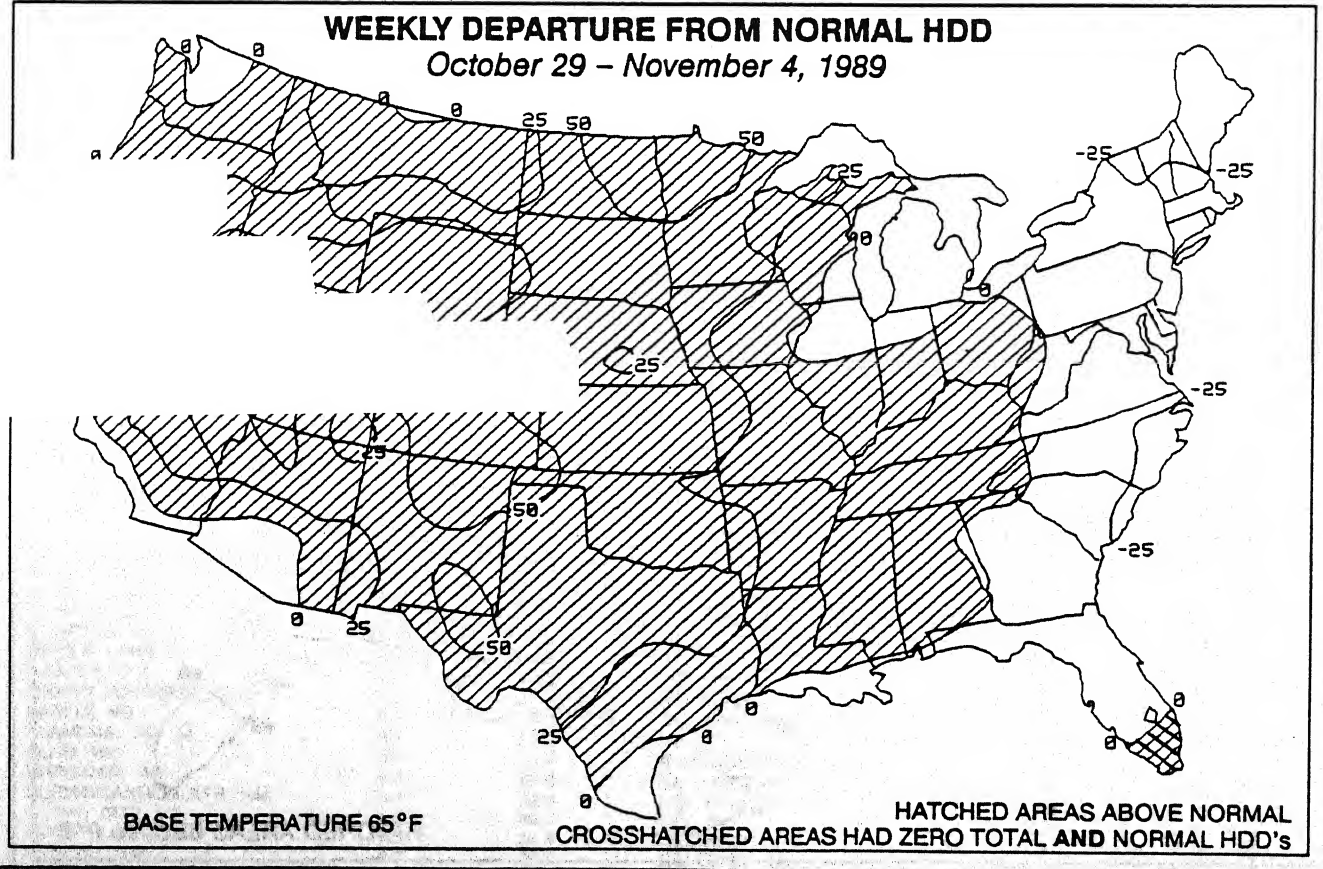


Very cold air dropped readings into the teens and single digits across the northern and central Rockies, eastern Great Basin, northern Plains, and upper Midwest (top), and the addition of gusty winds created subzero wind chills throughout much of the north–central U. S. (bottom).



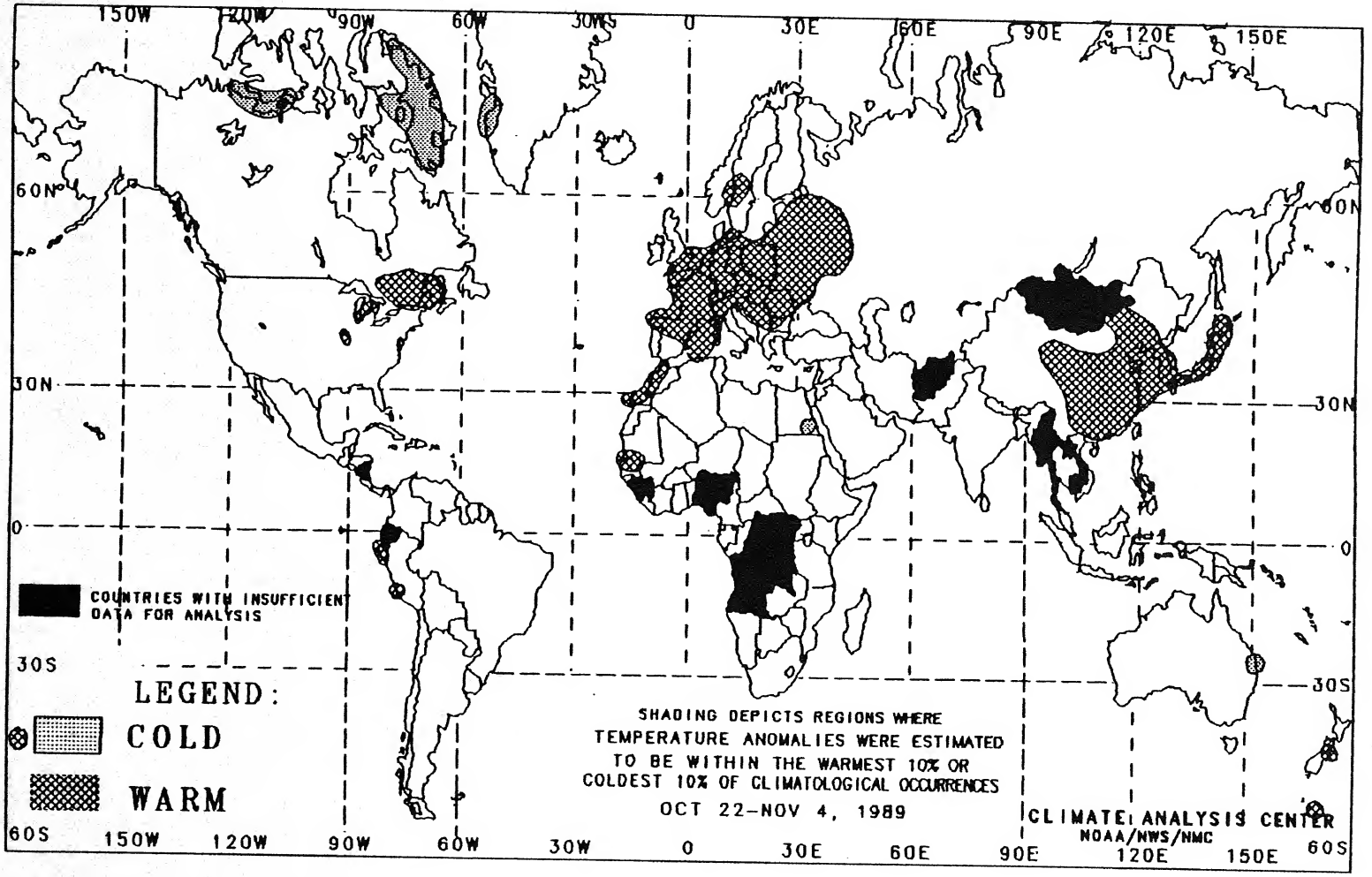


The previous week's abnormally mild conditions in the north-central U. S. were replaced with extremely cold weather as weekly total heating usage surpassed 200 HDD's in the Rockies, Great Basin, and northern Plains (top). Much of the western three-quarters of the nation observed above normal heating demand and subnormal temperatures, especially the central Rockies as departures exceeded +50 HDD's (bottom).



GLOBAL TEMPERATURE ANOMALIES

2 WEEKS

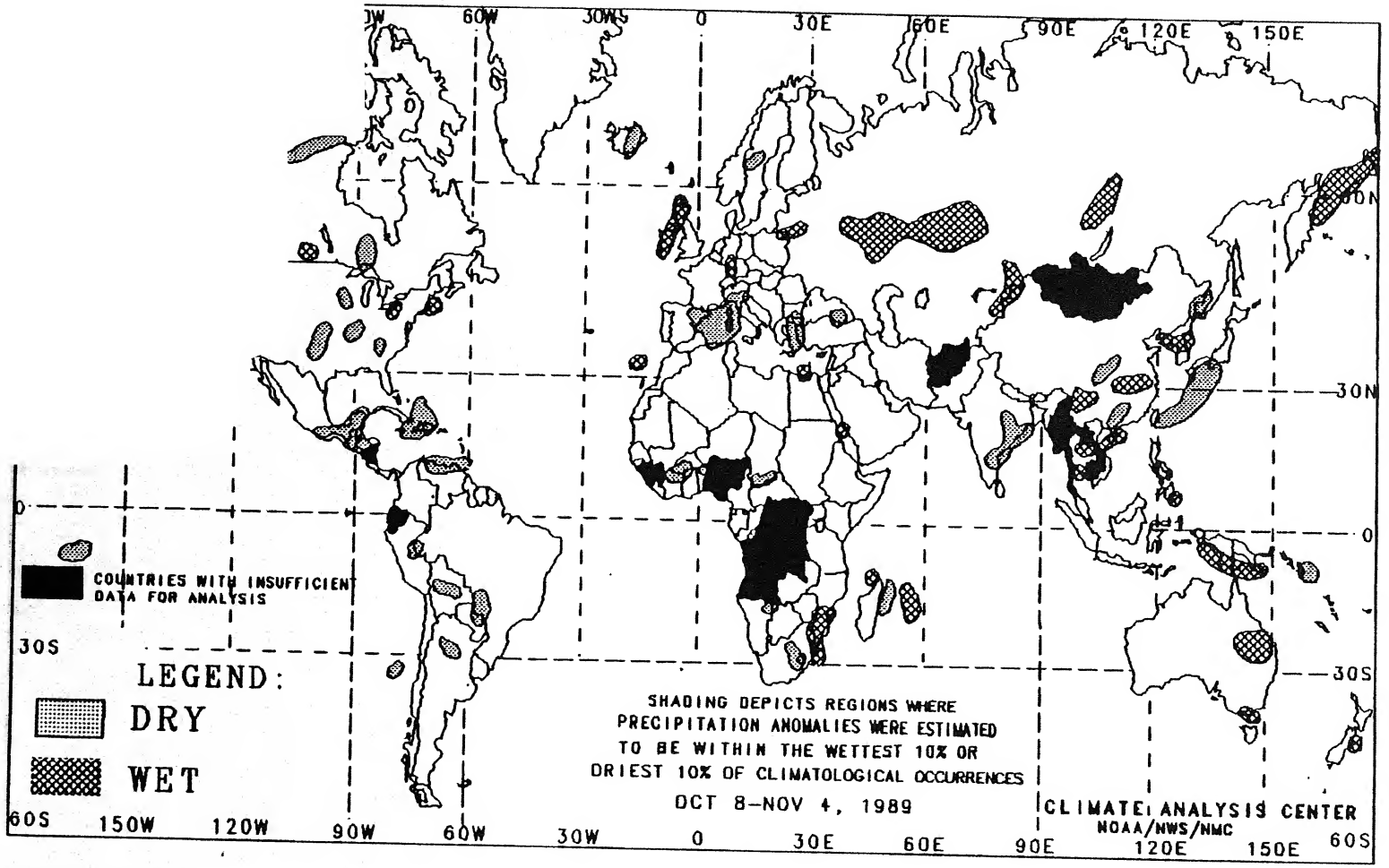


The anomalies on this chart are based on approximately 2500 observing stations for which at least 13 days of temperature observations were received from synoptic reports. Many stations do not operate on a twenty-four hour basis so many night time observations are not taken. As a result of these missing observations the estimated minimum temperature may have a warm bias. This in turn may have resulted in an overestimation of the extent of some warm anomalies.

Temperature anomalies are not depicted unless the magnitude of temperature departures from normal exceeds 1.5°C.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

This chart shows general areas of two week temperature anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.



The anomalies on this chart are based on approximately 2500 observing stations for which at least 27 days of precipitation observations (including zero amounts) were received or estimated from synoptic reports. As a result of both missing observations and the use of estimates from synoptic reports (which are conservative), a dry bias in the total precipitation amount may exist for some stations used in this analysis. This in turn may have resulted in an overestimation of the extent of some dry anomalies.

In climatologically arid regions where normal precipitation for the four week period is less than 20 mm, dry anomalies are not depicted. Additionally, wet anomalies for such arid regions are not depicted unless the total four week precipitation exceeds 50 mm.

In some regions, insufficient data exist to determine the magnitude of anomalies. These regions are located in parts of tropical Africa, southwestern Asia, interior equatorial South America, and along the Arctic Coast. Either current data are too sparse or incomplete for analysis, or historical data are insufficient for determining percentiles, or both. No attempt has been made to estimate the magnitude of anomalies in such regions.

The chart shows general areas of four week precipitation anomalies. Caution must be used in relating it to local conditions, especially in mountainous regions.

UNITED STATES MONTHLY CLIMATE HIGHLIGHTS

OCTOBER 1989

Similar to the transitional spring months, the autumn months, especially October, are typically a period of extremes. Even though October 1989 temperatures generally averaged near normal (within 2°F of the mean) across the lower 48 states, daily temperatures were anything but normal as several brief but unseasonably cold and warm spells were interspersed during the month. Hundreds of daily maximum and minimum temperature records were tied or broken throughout the month, and several stations set new October extreme temperature records (see Table 5). The highly variable conditions, however, failed to generate substantial monthly precipitation across much of the country. Most of the central one-third of the U.S. received less than 50% of the normal October precipitation, and much of the Southwest and Pacific Northwest were relatively dry. In contrast, wet weather continued to soak the mid-Atlantic and New England as parts of the latter region have now experienced six consecutive months with above normal precipitation (see front cover). Hurricane Jerry made landfall near Galveston, TX early Sunday evening (Oct. 15) with maximum sustained winds of 85 mph. Jerry spawned about a half a dozen tornadoes as it moved ashore and dumped locally heavy rains on extreme southeastern Texas and western Louisiana. The storm, however, rapidly weakened inland and was downgraded to a low pressure center in southwestern Arkansas by Monday. Farther north, unusually heavy early-season snows blanketed portions of the lower Midwest as up to 9 inches fell on north-central Indiana just a few days later. During the first week of October, very cold air covered the northern half of the country while moderate to heavy rains soaked the southern half of the Atlantic Coast states. High pressure and dry weather dominated the lower 48 states the following week as summer-like warmth persisted across the western and central U.S. and gradually pushed to the Atlantic Coast by mid-month. A stationary front across central Florida produced heavy rain along the state's eastern coast. The third week of the month brought a dramatic change in weather to the nation. Moisture from the remnants of Hurricane Jerry combined with a slow-moving cold front and brought heavy rains and flooding to sections of the central Appalachians. Unseasonably cold air plunged southward into the nation's midsection, while an upper-air disturbance produced unexpected heavy snows in the Midwest and inundating rains throughout the East. The month ended as temperatures rapidly moderated in Midwest, South, and East and Indian summer weather (warm days, cool nights, clear skies) prevailed across the eastern two-thirds of the nation. Farther west, a storm system brought wet weather to the northern half of the Pacific Coast.

According to the River Forecast Centers, the largest monthly totals (more than 6 inches) in the contiguous U.S. occurred in the Northeast, along Florida's eastern coast, and in portions of the central Appalachians, central Great Plains, south-central and extreme southeastern Texas, and the northern and central Cascades (see Table 1, Figures 1 and 2). Seasonably heavy amounts (between 8 and 24 inches) fell along Alaska's southeastern coast and on Hilo, HI. For the sixth successive month, sections of the Northeast received ample precipitation as nearly 40% of the region was unusually wet at the end of October (see front cover). Regionally, only the Northeast and the Southeast were comparatively wet as dry weather prevailed across much of the remainder of the United States.

Subnormal October precipitation occurred across most of the country, especially in the nation's midsection, as less than half the normal monthly precipitation was reported in much of the Plains, the Mississippi and Tennessee Valleys, the central Great Lakes, the central and southern Rockies, the desert Southwest, and the Pacific Northwest (see Table 2, Figures 1 and 2). The South (KS, OK, TX, AR, LA, MS) region recorded the eleventh driest October since 1895, and the overall national precipitation index ranked October 1989 as the 21st driest on record. Approximately 28% of the contiguous U.S., most notably the Southwest, southern Texas, the northern Great Plains, and the upper Great Lakes, experienced severe or extreme long-term drought, up slightly from last month's value.

Even though record or near-record warmth enveloped most of the western and central U.S. the second and fourth weeks of October, respectively, unseasonably cold air during the first and third weeks of the month offset much of the positive October temperature departures. The greatest above normal monthly temperatures (between 2°F and 4°F) were located in southern Arizona, the south-central Great Plains, and along portions of the Atlantic Coast (see Table 3, Figures 3 and 4). In Alaska, unusually mild conditions covered most of the state early in the month before frigid weather invaded the central and eastern sections during late October. Monthly temperatures, however, still averaged 2°F to 5°F above normal in portions of the state. Overall, the national and the nine climatically homogeneous regional temperatures were near the middle of the historical distribution (i.e. near normal).

The few areas with significant subnormal October temperatures (departures less than -2°F) included the central Gulf Coast and the north-central Intermountain West (see Table 4, Figures 3 and 4). Elsewhere, slightly cooler than normal conditions were observed in most of the northern and central Rockies, the northern Plains, the Great Basin, and in parts of the Southeast and eastern Corn Belt. Several stations in the South established new October extreme minimum temperature records as lows dipped near or below 32°F as far south as the Gulf Coast during the Oct. 19-21 cold wave (see Table 5).

TEMPERATURE AND PRECIPITATION RANKINGS FOR OCTOBER 1989, BASED ON THE PERIOD 1895 - 1989 (95 YEARS) WHERE 1 = DRIEST/COLDEST AND 95 = WETTEST/HOTTEST

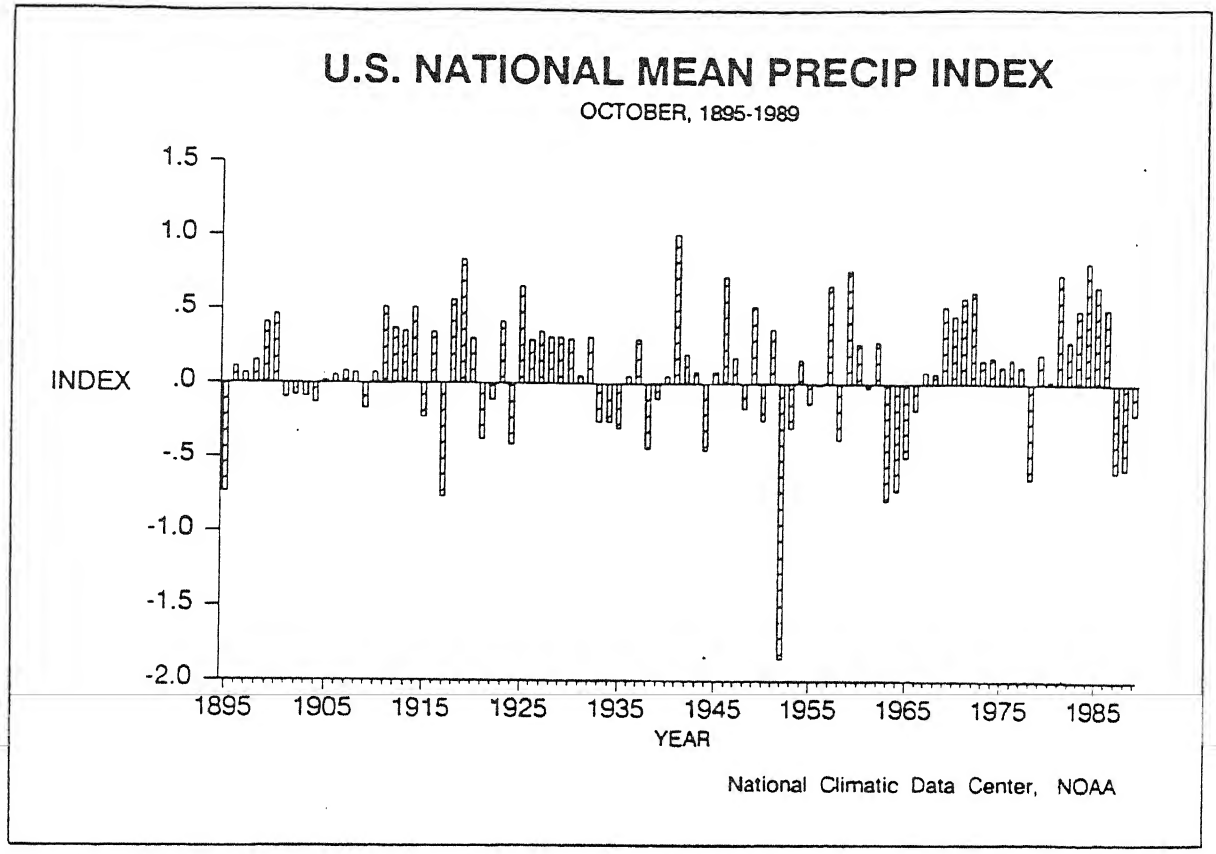
REGION	*PRECIPITATION*	*TEMPERATURE*
NORTHEAST	75	57
EAST NORTH CENTRAL	22	58
CENTRAL	43	51
SOUTHEAST	65	45
WEST NORTH CENTRAL	29	43
SOUTH	11	55
SOUTHWEST	21	64
NORTHWEST	40	38
WEST	47	47
NATIONAL	25	54

National Climatic Data Center

PRECIPITATION RANKINGS FOR JANUARY-OCTOBER 1989, BASED ON THE PERIOD 1895 - 1989 (95 YEARS) WHERE 1 = DRIEST AND 95 = WETTEST

STATE	*RANK*	*STATE*	*RANK*	*STATE*	*RANK*	*STATE*	*RANK*
AL	85	IA	11	NE	11	RI	89
AZ	9	KS	60	NV	40	SC	80
AR	80	KY	93	NH	61	SD	37
CA	31	LA	75	NJ	94	TN	95
CO	12	ME	37	NM	18	TX	48
CT	94	MD	93	NY	90	UT	10
DE	95	MA	83	NC	92	VT	78
FL	22	MI	13	ND	13	VA	92
GA	67	MN	27	OH	89	WA	40
ID	33	MS	85	OK	81	WV	95
IL	26	MO	25	OR	45	WI	9
IN	88	MT	70	PA	89	WY	33

National Climatic Data Center



U.S. National October 1989 mean precipitation index (top) and temperature (bottom). The October precipitation for each climate division in the country (total of 344) was first standardized over the 1951-1980 period, then weighed by area and averaged to determine a national standardized precipitation value. Negative (positive) values are dry (wet). Based upon the index, October 1989 ranked as the 21st driest October during the past 95 years. October 1989 temperatures across the contiguous U.S. averaged slightly above the long-term mean, ranking as the 42nd warmest October on record (since 1895). The 1989 value is based upon preliminary data which has a standard error of estimate of 0.26°F, indicated in the figure as '+'.

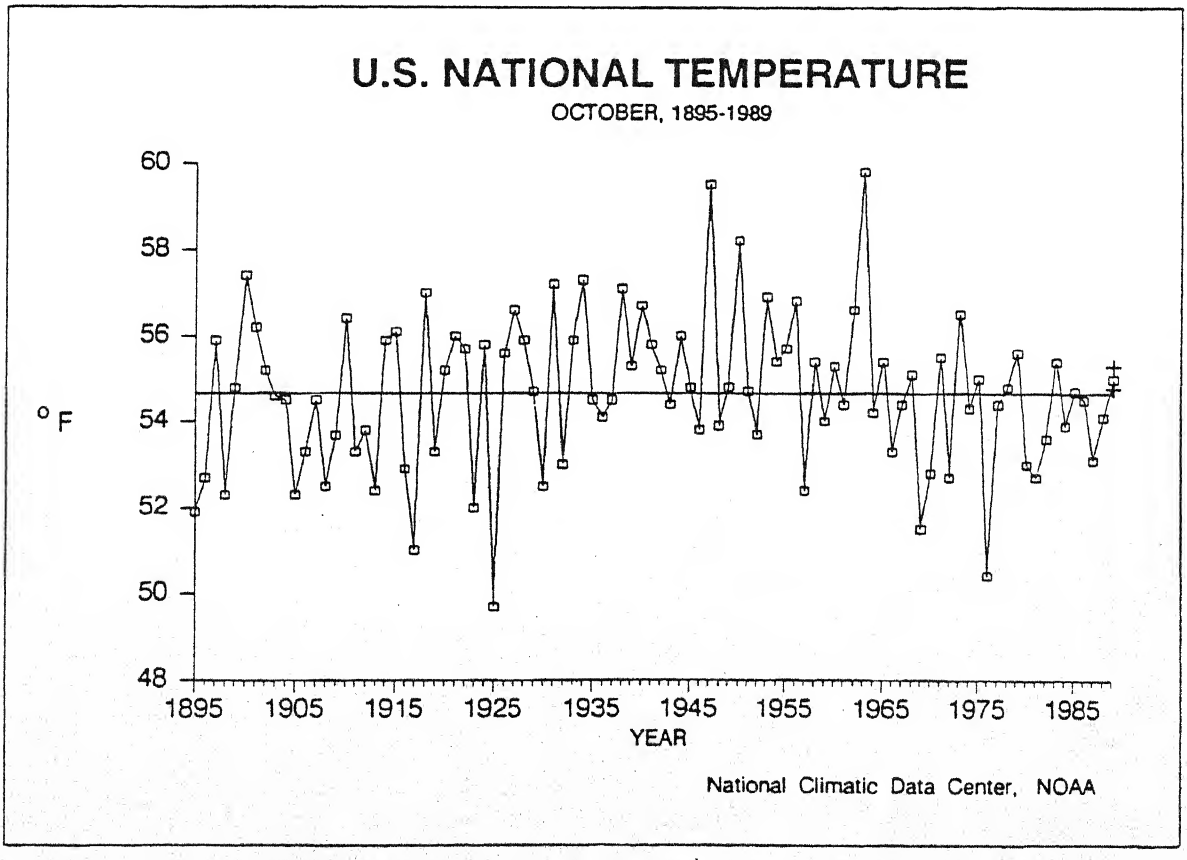


TABLE 1. OCTOBER STATIONS WITH MORE THAN 150% OF NORMAL PRECIPITATION AND MORE THAN 5 INCHES OF PRECIPITATION; OR, STATIONS WITH MORE THAN 6 INCHES OF PRECIPITATION AND NO NORMALS.

STATION	TOTAL (INCHES)	PCT. OF NORMAL	STATION	TOTAL (INCHES)	PCT. OF NORMAL
DAYTONA BEACH, FL	11.64	251.9	MYRTLE BEACH AFB, SC	6.10	***
MELBOURNE, FL	10.35	207.4	HICKORY, NC	5.95	174.5
CAPE CANAVERAL AFS, FL	10.16	***	ATHENS, GA	5.85	218.3
ISLIP, NY	10.14	275.5	SAN ANTONIO, TX	5.81	203.1
PROVIDENCE, RI	8.37	225.0	HONOLULU, OAHU, HI	5.66	304.3
CAPE HATTERAS, NC	8.35	172.5	BOSTON, MA	5.61	168.0
WORCESTER, MA	8.16	193.8	HARRISBURG, PA	5.58	204.4
CHICOPEE/WESTOVER AFB, MA	7.78	238.6	ALBANY, NY	5.53	190.0
HARTFORD, CT	7.62	218.3	WASHINGTON/NATIONAL, DC	5.48	189.6
JACKSON, KY	7.36	348.8	NEW YORK/LA GUARDIA, , NY	5.45	169.2
BRIDGEPORT, CT	7.02	212.1	NEWARK, NJ	5.36	174.6
KLAMNA, AK	6.89	232.0	CHANUTE, KS	5.36	155.4
NEW YORK/KENNEDY, NY	6.89	231.2	NEW BERN, NC	5.34	157.5
LONDON/CORBIN, KY	6.38	***	BECKLEY, WV	5.25	195.9
FALMOUTH/OTIS AFB, MA	6.33	***	RED BLUFF, CA	5.13	446.1
POUGHKEEPSIE, NY	6.25	189.4	GREENSBORO, NC	5.03	159.2
WASHINGTON/ANDREWS AFB, MD	6.25	***			

(Note: Stations without precipitation normals are indicated by asterisks.)

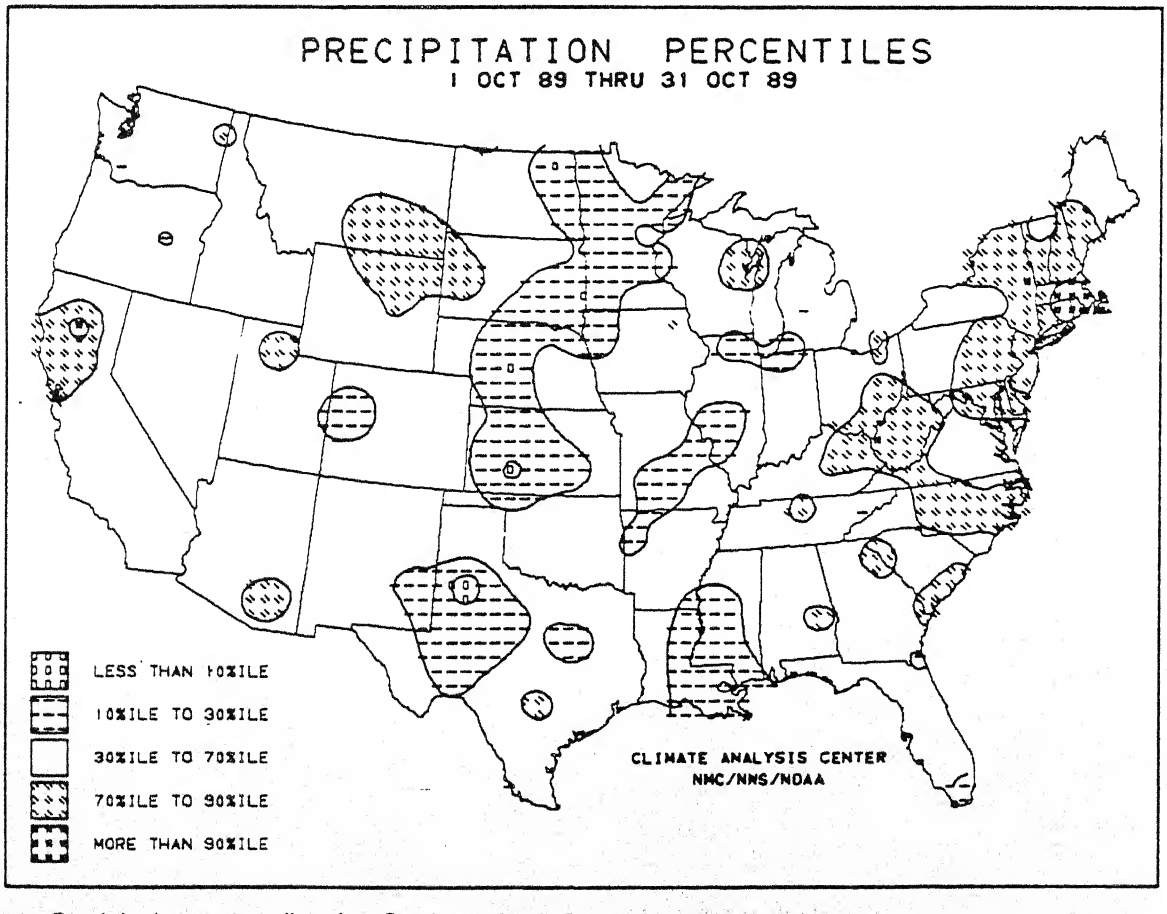


Figure 1. Precipitation percentiles for October 1989. Statistically significant (>70%ile) precipitation fell on the mid-Atlantic, New England, northern High Plains, and northern California while substantial dryness (<30%ile) occurred in the central one-third of the country.

TABLE 2. OCTOBER STATIONS WITH LESS THAN 50% OF NORMAL PRECIPITATION AND NORMAL PRECIPITATION 3.00 INCHES OR MORE.

STATION	TOTAL (INCHES)	PCT. OF NORMAL	NORMAL (INCHES)	STATION	TOTAL (INCHES)	PCT. OF NORMAL	NORMAL (INCHES)
MCALLEN, TX	0.14	4.4	3.20	GAINESVILLE, FL	1.02	31.0	3.29
ALICE, TX	0.19	6.1	3.14	BLUE CANYON, CA	1.06	27.0	3.93
HARRISON, AR	0.39	12.3	3.18	SPRINGFIELD, MO	1.12	35.0	3.20
LONGVIEW/GREGG CO., TX	0.40	13.3	3.02	PORT ARTHUR, TX	1.17	31.5	3.71
BILOXI/KEESLER AFB, MS	0.48	15.1	3.18	LAFAYETTE, LA	1.25	39.1	3.20
FT. SILL/HENRY POST, OK	0.50	15.8	3.17	JACKSONVILLE, FL	1.39	36.5	3.81
PINE BLUFF, AR	0.51	16.1	3.17	KOKEE, KAUAI, HI	1.41	30.2	4.67
SEXTON SUMMIT, OR	0.69	21.9	3.15	HOULTON, ME	1.43	41.0	3.49
LAKE CHARLES, LA	0.74	20.1	3.68	COLUMBIA, MO	1.44	44.7	3.22
FAYETTEVILLE, AR	0.75	22.6	3.32	SOUTH BEND, IN	1.45	45.3	3.20
FORT SMITH, AR	0.83	25.8	3.22	JOPLIN, MO	1.64	49.6	3.31
MCALESTER, OK	0.88	22.6	3.90	HOUSTON, TX	1.76	46.4	3.79
PALACIOS, TX	0.90	22.6	3.99	MIAMI, FL	2.65	37.2	7.12
WACO, TX	0.91	29.9	3.04	ADAK, AK	3.23	48.2	6.70
ROLLA, MO	0.92	25.1	3.67	KETCHIKAN, AK	9.41	38.1	24.71

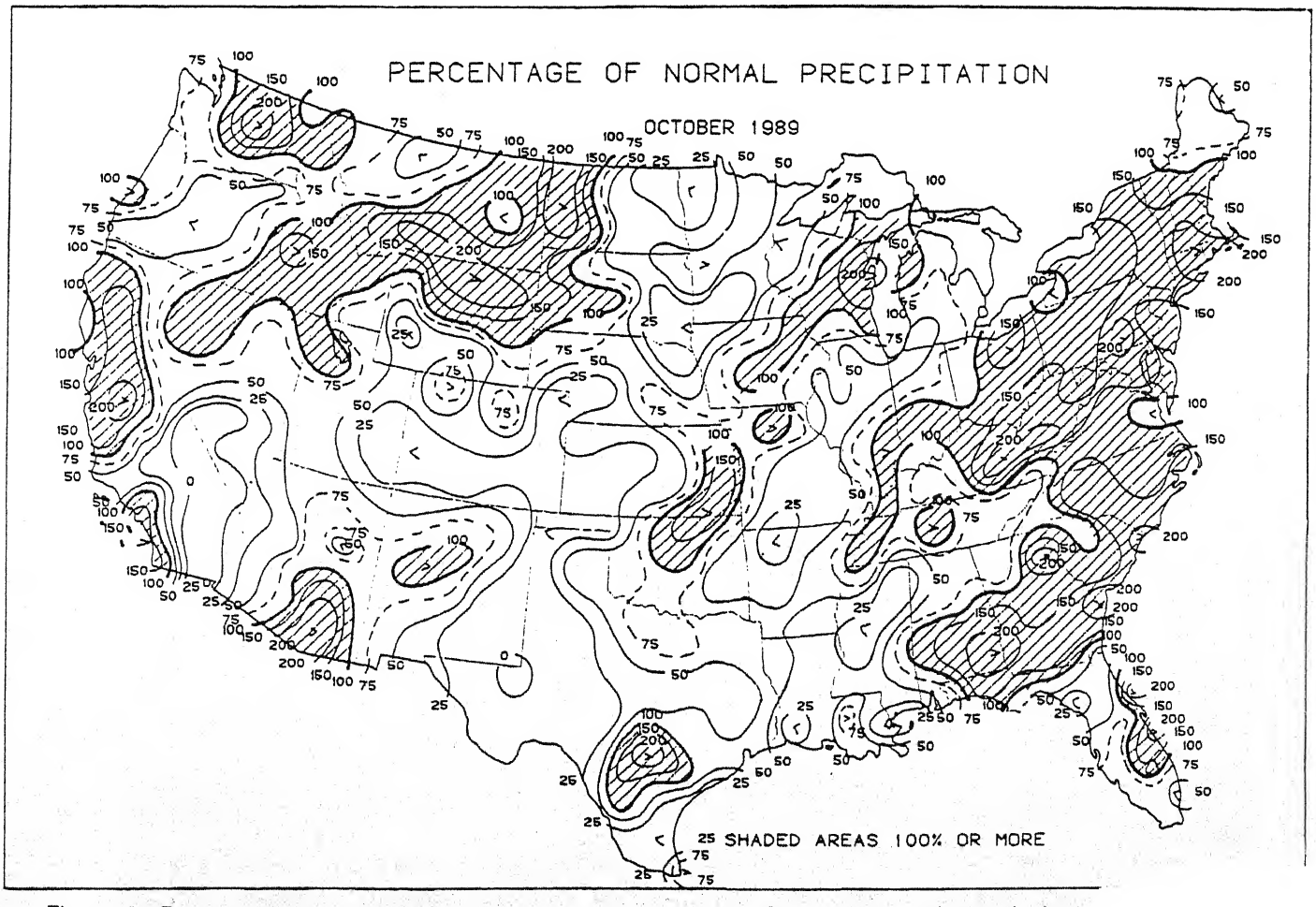


Figure 2. Percent of normal precipitation during October 1989. Shaded areas observed above precipitation. October marked the sixth consecutive month with near or excess precipitation making this year the wettest May-October period on record (since 1895). In sharp contrast, normal October precipitation was recorded in most of the Great Plains, Mississippi Valley, an

BLE 3. OCTOBER AVERAGE TEMPERATURES 2.0°F OR MORE ABOVE NORMAL.

TION	DEPARTURE (°F)	AVERAGE (°F)	STATION	DEPARTURE (°F)	AVERAGE (°F)
TER ISLAND, AK	+5.2	20.9	BECKLEY, WV	+2.5	54.1
ENIX, AZ	+4.0	77.4	BURLINGTON, VT	+2.5	50.4
ROW, AK	+3.7	18.1	ADAK, AK	+2.5	45.0
WELL, NM	+3.6	63.5	WASHINGTON/DULLES, VA	+2.4	57.1
GHKEEPSIE, NY	+3.6	55.0	BANGOR, ME	+2.3	49.9
K, WA	+3.6	50.9	BRADFORD, PA	+2.3	49.0
SALMON, AK	+3.6	36.9	RUMFORD, ME	+2.3	48.7
LOUIS, MO	+3.4	61.3	MCALLEN, TX	+2.2	77.1
IDALE/LUKE AFB, AZ	+3.3	74.2	AUSTIN, TX	+2.2	72.0
BOCK, TX	+3.1	64.0	HAMPTON/LANGLEY AFB,VA	+2.2	63.2
RLESTON, SC	+2.9	68.7	TUCSON/DAVIS-MONTHAN AFB, AZ	+2.1	71.2
D BAY, AK	+2.9	42.5	DALLAS/LOVE FIELD, TX	+2.1	70.1
IDING, UT	+2.8	54.6	CARLSBAD, NM	+2.1	65.2
RLOTTE, NC	+2.7	63.5	DOVER AFB, DE	+2.1	59.9
PAUL ISLAND, AK	+2.7	40.3	SALISBURY, MD	+2.1	59.5
VILLE NAS, TX	+2.5	75.3	SALINA, KS	+2.0	59.9
, PA	+2.5	54.9	NOME, AK	+2.0	30.3
STON, ID	+2.5	54.3			

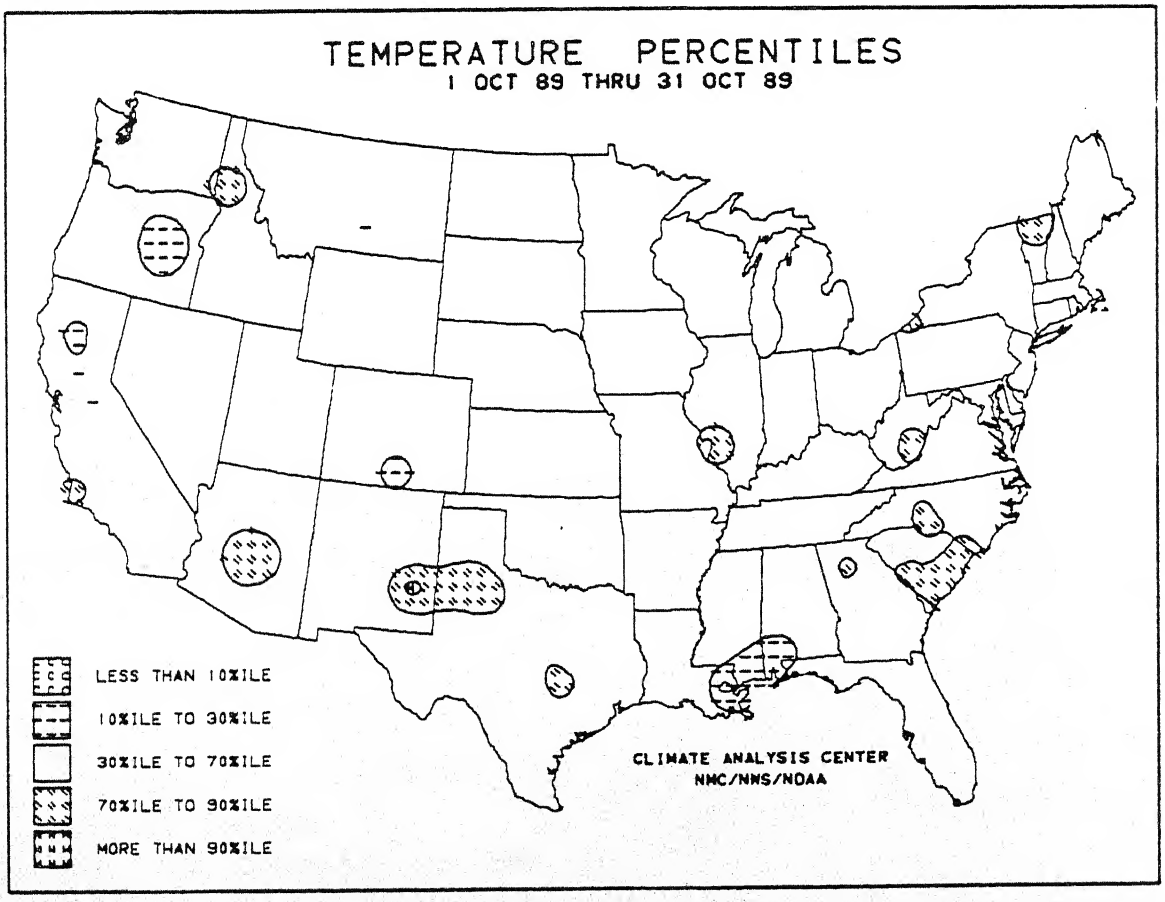


Figure 3. Temperature percentiles for October 1989. Very few areas observed statistically significant temperature percentiles (<30%ile or >70%ile) as monthly departures were generally within 2°F of normal. Daily temperature, however, were anything but normal across much of the country as October was interspersed with several brief warm and cold spells.

TABLE 4. OCTOBER AVERAGE TEMPERATURES 2.0°F OR MORE BELOW NORMAL.

STATION	DEPARTURE (°F)	AVERAGE (°F)	STATION	DEPARTURE (°F)	AVERAGE (°F)
REDDING, CA	-5.2	61.0	BILOXI/KEESLER AFB, MS	-2.3	67.7
MEACHAM, OR	-4.1	41.6	BILLINGS, MT	-2.2	47.1
BURNS, OR	-3.7	44.2	RED BLUFF, CA	-2.2	62.9
BLUE CANYON, CA	-2.6	51.6	GAINESVILLE, FL	-2.2	69.7
WARROAD, MN	-2.5	41.3	ESCENABA, MI	-2.1	45.4
MOBILE, AL	-2.5	66.0	VALPARAISO/EGLIN AFB, FL	-2.0	66.7
CALIENTE, NV	-2.4	52.4			

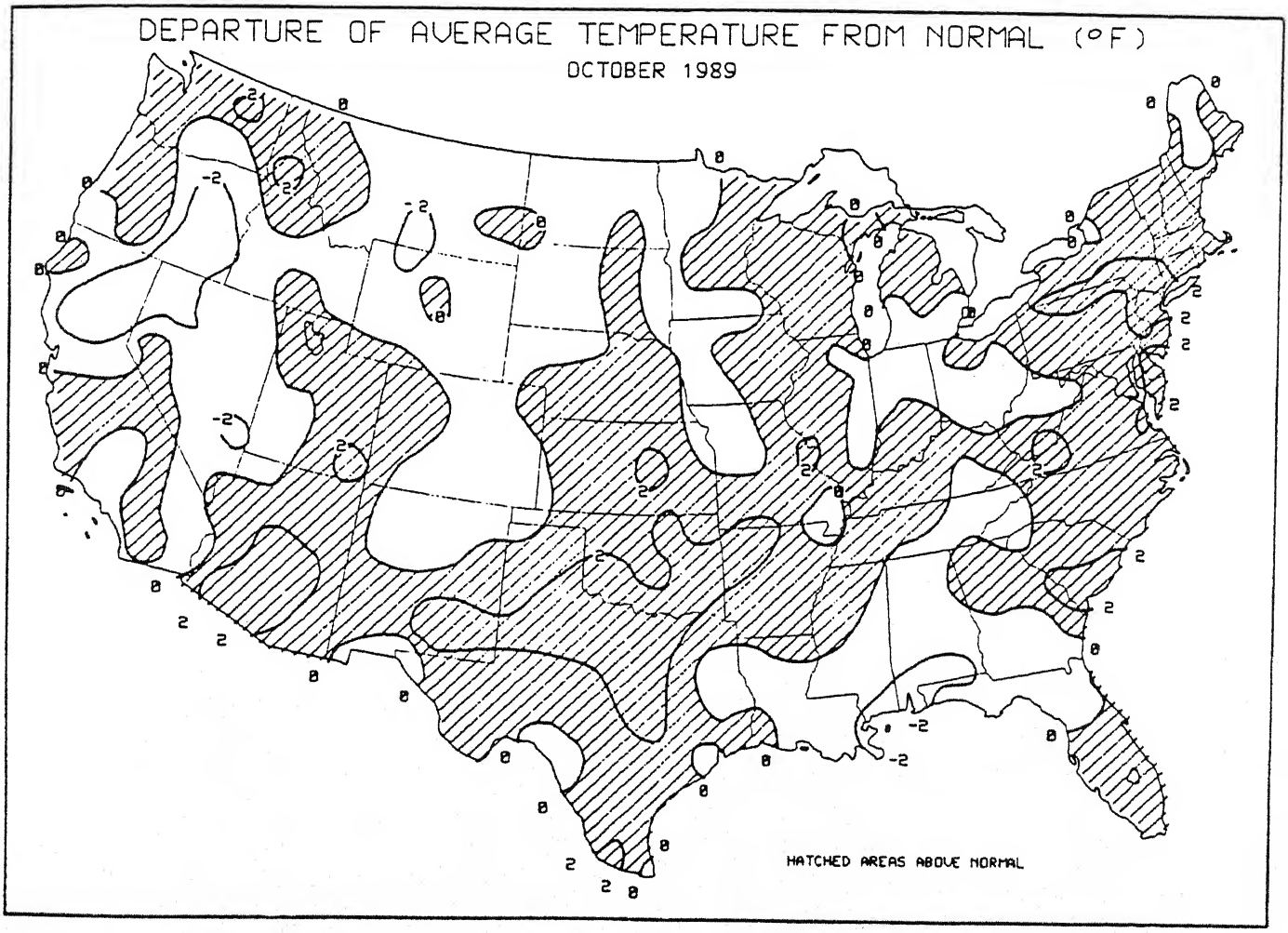
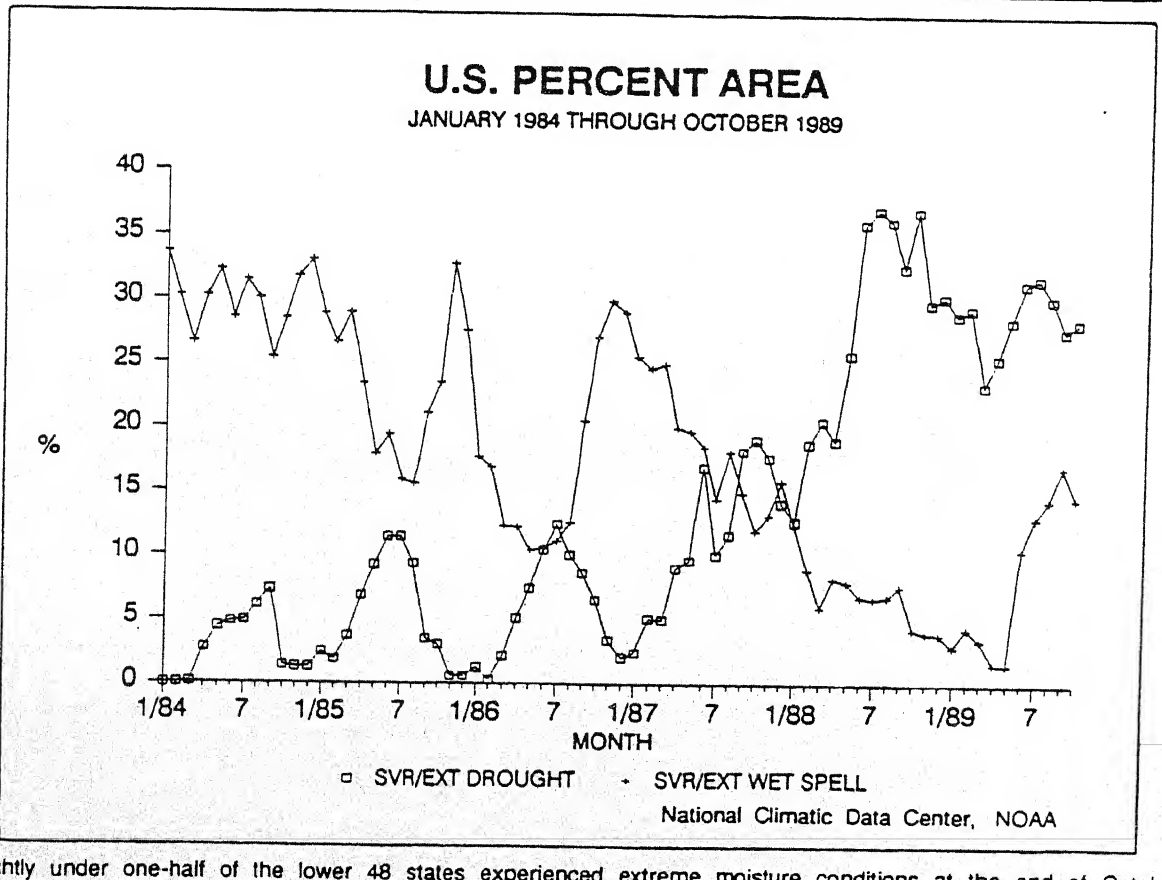


Figure 4. October 1989 average temperature departure from normal (°F). Isotherms are drawn every 2°F, and shaded areas are above normal. Several short-lived but extremely warm and cold episodes, typical of a transitional month (Summer to Winter), characterized October 1989 as monthly temperatures generally averaged near normal (within 2°F). The few exceptions included the south-central Great Plains and along parts of the East Coast (departures >+2°F), and the northern Intermountain West and along the central Gulf Coast (departures <-2°F).

TABLE 5. RECORD OCTOBER EXTREME TEMPERATURES.

STATION	EXTREME (°F)	DATE	RECORD TYPE	RECORDS BEGAN
WACO, TX	101	2 OCT 89	HIGHEST	1944
AUSTIN, TX	98	2 OCT 89	HIGHEST	1942
VICTORIA, TX	96	6 OCT 89	HIGHEST	1961
WEST PALM BEACH, FL	95	2 OCT 89	HIGHEST	1937
LAKE CHARLES, LA	92	3 OCT 89	HIGHEST	1962
NORTH PLATTE, NE	91	13 OCT 89	HIGHEST	1948
BECKLEY, WV	81	14 OCT 89	HIGHEST	1963
MARQUETTE, MI	78	1 OCT 89	HIGHEST	1979
DAYTONA BEACH, FL	41	21 OCT 89	LOWEST	1944
BROWNSVILLE, TX	40	20 OCT 89	LOWEST	1937
CORPUS CHRISTI, TX	39	20 OCT 89	LOWEST	1939
APALACHICOLA, FL	37	21 OCT 89	LOWEST	1930
SACRAMENTO, CA	36	31 OCT 89	LOWEST	1940
JACKSONVILLE, FL	36	21 OCT 89	LOWEST	1942
NEW ORLEANS, LA	35	20 OCT 89	LOWEST	1939
LAKE CHARLES, LA	32	20 OCT 89	LOWEST	1962
HOUSTON, TX	32	20 OCT 89	LOWEST	1970
TALLAHASSEE, FL	30	21 OCT 89	LOWEST	1940
SHREVEPORT, LA	29	20 OCT 89	LOWEST	1953
JACKSON, MS	29	20 OCT 89	LOWEST	1963
SAN ANGELO, TX	28	19 OCT 89	LOWEST	1948
MIDLAND, TX	27	19 OCT 89	LOWEST	1949
GRAND JUNCTION, CO	18	31 OCT 89	LOWEST	1946
NORTH PLATTE, NE	11	19 OCT 89	LOWEST	1948



Slightly under one-half of the lower 48 states experienced extreme moisture conditions at the end of October. Based upon the long-term Palmer Drought Index (PDI), nearly 30% of the nation was afflicted with severe or extreme drought (PDI<-3.0). In contrast, excessive wetness (PDI>+3.0) was observed in approximately one-seventh of the country. Regionally, long-term dryness persisted in the Southwest, the northern Great Plains, and the upper Midwest while parts of the East and Southeast were extremely moist.